

**REMARKS**

Upon entry of this Amendment, claims 24-28, 31, and 33-47 remain pending and under current examination.

**Regarding the Office Action:**

In the Office Action,<sup>1</sup> the Examiner rejected claims 24-47 under 35 U.S.C. § 103(a) as being unpatentable over Eldada (U.S. Patent No. 6,091,870) ("Eldada") in view of Nesnidal et al. (U.S. Patent App. Pub. No. US2004/0022489A1) ("Nesnidal"). Applicants traverse the rejections for the following reasons.

**Regarding the Claim Amendments:**

Applicants have canceled claims 29, 30, and 32, without prejudice or disclaimer of their subject matter, and amended claims 24, 31, 33, 34, 37, 39, and 43. Claims 24 and 43 have been amended to more appropriately define the present invention. Claims 31, 33, 34, 37, and 39 have been amended to correct claim dependency in light of canceled claims 29, 30, and 32.

Support for the amendments to claims 24 and 43 may be found in the specification, at, for example, the originally presented claims, p. 9, lines 10-24, p. 23, line 15 to page 24, line 6, and p. 25, lines 15-18.

**Rejection of Claims 24-47 under 35 U.S.C. § 103(a):**

Applicants request reconsideration and withdrawal of the rejection of claims 24-47 under 35 U.S.C. § 103(a) as being unpatentable over Eldada in view of Nesnidal. Applicants respectfully disagree with the Examiner's arguments and conclusions. *A prima facie* case of obviousness has not been established. As M.P.E.P. § 2142 states, "[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness."

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<sup>1</sup> The Office Action contains statements characterizing the related art and the claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142, 8th Ed., Rev. 5 (August 2006), p. 2100-125, 126.

Each of these requirements must "be found in the prior art, and not be based on applicant's disclosure." M.P.E.P. § 2143.

A requirement for establishing a *prima facie* case of obviousness is not met, because Eldada and Nesnidal, taken alone or in combination, do not teach or suggest every feature of Applicants' claims.

In rejecting the claims, particularly independent claims 24 and 43, the Examiner admitted that "Eldada does not specifically describe the regions of different refractive index comprising a portion of the uncoupled waveguide and a gap formed in the uncoupled waveguide with a 1.5% difference between the refractive indices of the regions" (Office Action, p. 3). In an attempt to remedy this deficiency of Eldada, the Examiner then applied Nesnidal to allegedly teach "regions of different refractive index comprising a portion of the uncoupled waveguide and a gap formed in the uncoupled waveguide with a 1.5% difference between the refractive indices of the regions (see paragraphs 0006 and 0019-0022)" Id.

In response, Applicants submit that Eldada and Nesnidal, taken alone or in combination, do not teach or suggest each and every element of Applicants' claimed invention, despite the Examiner's allegations. Particularly, Eldada and Nesnidal do not teach or suggest at least Applicants' claimed combination of

*...a plurality of pairs of regions having a first refractive index  $n_1$  and, respectively, a second refractive index  $n_2$  greater than the first, said regions being adjacent to each other along the respective waveguide section ...*

*...wherein said plurality of pairs of regions comprises a plurality of transmissive pairs of regions for transmitting optical signals with wavelengths within a prescribed wavelength pass band, and a plurality of reflective pairs of regions for reflecting optical signals with wavelengths within a prescribed wavelength stop band containing the pass band, and further wherein*

*at least one dimension varies between the dimensions of the plurality of transmissive pairs of regions in a light propagation direction and a number of reflective pairs of regions placed between consecutive transmissive pairs of regions. (Claim 24, emphasis added, and similar elements in claim 43.)*

While Eldada mentions a grating system 32 across grating region 30 between two coupling regions 26, 28, as shown in Fig. 2, Eldada does not teach or suggest anything related to the above-quoted elements of Applicants' independent claims 24 and 43.

In addition, while the Examiner applied Nesnidal as allegedly teaching "regions of different refractive index comprising a portion of the uncoupled waveguide and a gap formed in the uncoupled waveguide with a 1.5% difference between the refractive indices of the regions (see paragraphs 0006 and 0019-0022)" (Office Action, p. 3), Nesnidal also does not teach or suggest anything related to the above-quoted elements of Applicants' independent claims 24 and 43.

Finally, there is no motivation to combine Eldada and Nesnidal. The Federal Circuit has noted that "virtually all [inventions] are combinations of old elements." See e.g., *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998) (internal citations omitted). The Federal Circuit has explained that an Examiner may find every element of a claimed invention in the prior art, but mere identification is not sufficient to negate patentability. See Id. The court

explained that “the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.” Id.

Also, determinations of obviousness must be supported by evidence on the record. *See In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001), 59 USPQ2d 1693, 1696-98 (finding that the factual determinations central to the issue of patentability, including conclusions of obviousness by the Board, must be supported by “substantial evidence”). The desire to combine or modify references must be proved with “substantial evidence” that is a result of a “thorough and searching” factual inquiry. *See In re Lee*, 277 F.3d 1338, 1343-1344 (Fed. Cir. 2002), 61 USPQ2d 1430, 1433 (quoting *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52). Additionally, the Federal Circuit has clearly stated that the evidence of a motivation or suggestion to modify a reference must be “clear and particular.” *In re Dembicziak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

In this case, the Office Action does not show that a skilled artisan considering Eldada and Nesnidal, and not having the benefit of Applicants’ disclosure, would have been motivated to combine the references in a manner resulting in Applicants’ claimed invention. The Examiner’s allegation that “[t]he motivation for [combining Eldada and Nesnidal] would have been to improve filtering ability of the Eldada structure...” (Office Action, p. 3), does not provide “clear and particular” reasons why a skilled artisan “would select the elements from the cited prior art references for combination in the manner claimed.” *See In re Dembicziak*, 175 F.3d at 999, 50 USPQ2d at 1617; *In re Rouffet*, 149 F.3d at 1357, 47 USPQ2d at 1457. Hypothetically improving the filtering ability of the Eldada structure does not go to the reasons why one of ordinary skill would have selected Eldada and Nesnidal to teach or suggest at least the above-

quoted elements of independent claims 24 and 43. The allegations in the Office Action are not properly supported and do not show motivation for one of ordinary skill in the art to combine the references as the Examiner has alleged.

In summary, the Examiner has not met his burden of establishing a *prima facie* case of obviousness of at least independent claims 24 and 43 over Eldada and Nesnidal. Applicants therefore submit that independent claims 24 and 43 are allowable, as are claims 25-28, 31, 33-42, and 44-47, at least by virtue of their respective dependence from base claim 24 or 43. Accordingly, Applicants request that the 35 U.S.C. § 103(a) rejection be withdrawn.

**Conclusion:**

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the rejections. Pending claims 24-28, 31, and 33-47 are in condition for allowance. Accordingly, Applicants request a favorable action.

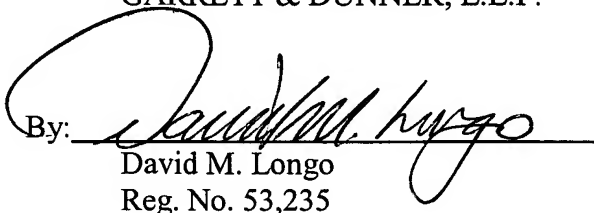
If there are any remaining issues or questions, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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